

## Claims

- [c1] 1. A method for transmitting voice data over various types of networks, the method comprising the steps of:
- setting up a connection by using a signaling protocol for circuit-switched transmission of user data;
  - transmitting the user data via a transmission link of a circuit-switched network;
  - distributing the user data to data packets;
  - forwarding the user data via a packet transmission network if the user data are typical of voice transmission;
  - forwarding no user data via the packet transmission network if the user data are typical of silence intervals;
  - determining, via at least one signaling unit included in the connection set up, the type of connection; and
  - checking for silence intervals only if a voice transmission link has been set up.
- [c2] 2. A method for transmitting voice data over various types of networks as claimed in claim 1, the method further comprising the steps of:
- indicating, in the data packets and via a value of at least one bit position, that further data packets are following; and
  - transmitting at least one data packet which contains a different value at the bit position if a silence interval is detected.
- [c3] 3. A method for transmitting voice data over various types of networks, the method comprising the steps of:
- transmitting user data in data packets in a packet transmission network;
  - depacketizing the user data;
  - forwarding the user data via a transmission link of a circuit-switched data transmission network;
  - indicating, in the data packets and via a value of at least one bit position, that further data packets are following; and

indicating, via a different value of the bit position, that a silence interval is detected in which no user data are transmitted.

- [c4] 4. A method for transmitting voice data over various types of networks as claimed in claim 3, wherein, when a silence interval is present, an event occurs which is one of transmitting user data which are typical of silence intervals via the transmission link, and signaling the presence of a silence interval to the circuit-switched data transmission network in a different way.
- [c5] 5. A method for transmitting voice data over various types of networks as claimed in claim 3, wherein a connection is set up by using a signaling protocol for the circuit-switched transmission of the user data, at least one signaling unit included in the connection setup determines the type of connection, and the check for silence intervals is only performed when a voice transmission link has been set up.
- [c6] 6. A method for transmitting voice data over various types of networks as claimed in claim 1, wherein the type of connection is determined in at least two signaling units involved in the connection set up independently of one another, and no signaling with respect to the type of connection is carried out between the signaling unit.
- [c7] 7. A method for transmitting voice data over various types of networks as claimed in claim 1, wherein the signaling protocol is one of the ISUP protocol or the Q.931 protocol, and a parameter in which the type of connection is specific is read in the signaling unit for determining the type of connection.
- [c8] 8. A method for transmitting voice data over various types of networks as claimed in claim 2, wherein the bit position is a marker bit according to an RTP transmission protocol.
- [c9] 9. A method for transmitting voice data over various types of networks as claimed in claim 1, wherein the check for silence intervals is

carried out as a function of a message of the signaling unit to at least one interworking unit which is connected between the transmission link and the packet transmission network.

[c10] 10. A method for transmitting voice data over various types of networks as claimed in claim 1, wherein a silence interval is detected when no user data typical of voice transmission are transmitted for at least 20 milliseconds.

[c11] 11. A method for transmitting voice data over various types of networks as claimed in claim 1, wherein the data packets are transmitted according to the internet protocol.

[c12] 12. A method for transmitting voice data over various types of networks as claimed in claim 1, wherein the transmission link is formed by a time slot.

[c13] 13. A method for transmitting voice data over various types of networks as claimed in claim 1, wherein the user data are coded in accordance with a G.711 standard.

[c14] 14. An exchange unit, comprising:  
an access unit which signals in accordance with a protocol for circuit-switched data networks; and  
a control unit which determines, during a connection setup, a type of user data which are transmitted during the connection setup, wherein the control unit transmits the type of user data depending upon the type of user data to an interworking unit which is used for transmitting the user data of the connection to be set up and which is connected between a circuit-switched data transmission network and a packet transmission network transmitting data packets.

[c15] 15. An exchange unit as claimed in claim 14, wherein one of the signaling unit and the interworking unit initiates, as a function of the type of user data, measures via which no data packets are transmitted in silence

intervals.

[c16]

16. An interworking unit for transmitting voice data via various types of networks, comprising:

a conversion unit which distributes user data, transmitted via a transmission link of a circuit-switched data transmission network, to data packets and forwards the data packets via a packet transmission network when the user data are typical of voice transmission; and

a control unit which does not forward any user data via the packet transmission network when the user data are typical of silence intervals.

[c17]

17. An interworking unit for transmitting voice data via various types of networks, comprising:

a conversion unit which depacketizes data packets with user data, transmitted via a packet transmission network, and forwards the user data via a transmission link of a circuit-switched data transmission network; and

a control unit which determines as a function of the value of a bit position in the data packets that a silence interval is detected in which no data packets are transmitted.

[c18]

18. A program with an instruction sequence, upon execution of the instruction sequence by a processor a method is carried out which includes the steps of:

setting up a connection by using a signaling protocol for circuit-switched transmission of user data;

transmitting the user data via a transmission link of a circuit-switched network;

distributing the user data to data packets;

forwarding the user data via a packet transmission network if the user data are typical of voice transmission;

forwarding no user data via the packet transmission network if the user data are typical of silence intervals;

determining the type of connection via at least one signaling unit

included in the connection setup; and

checking for silence intervals only if a voice transmission link has been set up.

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